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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/786,395	02/26/2004	Chiaki Kumada	Q80012	2869
23373	7590	08/25/2004	EXAMINER	
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			JEFFERY, JOHN A	
			ART UNIT	PAPER NUMBER
			3742	

DATE MAILED: 08/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/786,395

Applicant(s)

KUMADA ET AL.

Examiner

John A. Jeffery

Art Unit

3742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>20040330</u> . | 6) <input checked="" type="checkbox"/> Other: <u>See Continuation Sheet</u> . |

Continuation of Attachment(s) 6). Other: Computer translation of JP2001-153359.

DETAILED ACTION

Title of Invention

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: "Glow Plug Comprising Heating Coil With Pt, Pd, or Rh Coating."

Joint Inventors--Common Ownership Presumed

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103, the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligations under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Subject matter developed by another person, which qualifies as prior art only under subsection (f) and (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

Claims 1 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art in view of Sperner et al (US 4,358,663). In Fig. 2 and Paras. 02-04 of the instant application, applicant admits to be old and well known a glow plug comprising all of the structure claimed except for the heating coil portion to have a coating layer comprising Pt, Pd, Rh, or an alloy containing two or more of such elements. Sperner et al (US 4,358,663), however, teaches coating a heater coil core with a metal from the platinum group or an alloy comprising at least one metal from the platinum group. Col. 3, lines 25-41. As noted in col. 3, lines 10-14, platinum is used because of its chemical stability and good fabrication qualities.

In view of Sperner et al (US 4,358,663), it would have been obvious to one of ordinary skill in the art to provide a heater coil with a platinum coating in lieu of the uncoated heater wire of admitted prior art glow plug to increase the heater wire's chemical stability at elevated temperatures, thereby prolonging heater life.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art in view of Sperner et al (US 4,358,663) and further in view of Izzi (US 4,582,980). The claim differs from the previously cited prior art in calling for the heating coil to comprise a Fe-Cr-Al alloy. But such alloys are commonly used for heater coils in glow plugs as evidenced by Izzi (US 4,582,980) noting col. 3, lines 28-35.

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As noted in the passage, Fe-Cr-Al alloys are preferred in glow plugs in view of the alloy's high electrical resistance and low temperature coefficient.

In view of Izzi (US 4,582,980), it would have been obvious to one of ordinary skill in the art to use an Fe-Cr-Al alloy in the heater coil of the previously described apparatus so that a high-resistance alloy with low temperature coefficient was used for the heater coil, thus ensuring rapid heat-up and improved heating control.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art in view of Sperner et al (US 4,358,663) and further in view of JP2001-153359. The claim differs from the previously cited prior art in calling for the coating layer to have a thickness from 0.2-0.5 microns. Such thicknesses for platinum coating layers, however, are known in the art as evidenced by JP2001-153359 noting Para. 0010 of the computer translation in which the platinum coating is from 0.5 – 10 microns. Thus, the lower limit of JP2001-153359 includes the claimed upper limit of 0.5 microns. As noted in Para. 0010, if the platinum coating is too thin, peeling or oxidation of the core may result. On the other hand, if the platinum coating is too thick, the device will be too expensive.

In view of JP2001-153359, it would have been obvious to one of ordinary skill in the art to coat the wire core with a platinum coating having within the claimed thickness range to prevent peeling or oxidation, yet minimize the amount of platinum need thus reducing cost.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John A. Jeffery whose telephone number is (703) 306-4601. The examiner can normally be reached on Monday - Thursday from 7:00 AM to 4:30 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robin Evans, can be reached on (703) 305-5766. All faxes should be sent to the centralized fax number at (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free)



**JOHN A. JEFFERY
PRIMARY EXAMINER**

8/24/04